L 04606-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6032851

SOURCE CODE: UR/0020/66/170/003/0552/0553

AUTHOR: Pinayeva, M. M.; Shul'gin, B. V.; Krylov, Ye. I.

35

ORG: Ural Polytechnic Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)

B

TITLE: On the luminescence of europium 21 orthotantalate 21

SOURCE: AN SSSR. Doklady, v. 170, no. 3, 1966, 552-553

TOPIC TAGS: europium compound, luminescence

ABSTRACT: An investigation was made of the luminescence of europium orthotantalate and lanthanum orthotantalate in view of their possible use in lasers. Excitation was produced by ultraviolet light with a wavelength of 265 mμ from the full spectrum of a mercury vapor lamp. A monochromator, a photoelectronic multiplier with high sensitivity in the red region, and an amplifier were used to analyze the luminescence spectrum. All experiments were performed at 300K. In the $EuTaO_4$ spectrum, the strongest line observed was 608 mμ with a 22-mμ halfwidth. Also observed were the 595, 695, 656, and 538 mμ lines (given in the order of decreasing sensitivity). The measurements of $LaTaO_4$ showed high luminescence in the investigated region. Here, the presence of the 608, 538, and 695 mμ lines demonstrates a sufficiently high luminescence intensity of europium contained in the $LaTaO_4$ matrix at a concentration of 0.01%. Because of the lack of a 220-mμ excitation source, the maximum of the excitation

Card 1/2

UDC: 546.651 + 546.883:535.370

L 04606-67

ACC NR: AP6032851

0

spectrum of $EuTaO_4$ could not be established. However, an evaluation of the measurements showed that at this excitation level the luminescence output of this material can be close to unity, i.e., twice as high as the estimated output of $LaTaO_4$. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 25Dec65/ ORIG REF: 002/ OTH REF: 007/ ATD PRESS: 5100

Card 2/2 eah

L 05415-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6032079 SOURCE CODE: UR/0078/66/011/010/2312/2315

AUTHOR: Startsev, V. N.; Krylov, Ye. I.; Koz'min, Yu. A.

22
B

ORG: Laboratory of Rare and Rare Earth Nonferrous Metals

TITLE: Extraction of tetravalent titanium from hydrochloride solutions using tributylphosphate

SOURCE: Zhurnal neorganicheskoy khimii, v. 11, no. 10, 1966, 2312-2315

TOPIC TAGS: titanium, hydrochloride, tributylphosphate, titanium extraction

ABSTRACT: A study was made of the extraction of titanium (IV) from hydrochloride solutions using tributylphosphate (TBP). Measurements of the optical density of the solutions showed that when the amount of free hydrochloric acid in the solution is increased and the amount of titanium is maintained constant, or when the amount of titanium is increased and the amount of hydrochloric acid is maintained constant, the equilibrium of the reaction $H_2TiCl_6 \rightleftarrows TiCl_6^{2-} + 2H^+$ is displaced toward the formation of complex $[TiCl_6]^{2-}$ ions. The same ratio for the distribution factor is maintained in relation to the amount of free hydrochloric acid and the amount of. titanium in the solution: it increases with an increase in the

Card 1/2 UDC: 546.824'131:542.61

ACC NR: AP6032979

amount of complex $[TiCl_6]^{2-}$ ions in the solution. A comparison of the optical densities of the initial solution and the organic phase, as functions of HCl and the amount of titanium, seems to indicate that the titanium passes into the ester layer in the form of a complex hexachlorotitanic acid $[TiCl_6]^{2-}$ anion. Orig. art. has: 3 figures. [Based on authors' abstract]

SUB CODE: 07/ SUBM DATE: 19Dec64/ ORIG REF: 006/ OTH REF: 002/

Card 2/2

ACC NR: AP6036991 (A,N) SOURCE CODE: UR/0181/66/008/011/3382/3383

AUTHOR: Rozhdestvenskiy, F. A.; Krylov, Ye. I.

ORG: Ural Polytechnic Institute im. S. M. Kirov, Sverdlovsk (Ural'skiy politekhnicheskiy institut)

TITLE: Infrared absorption spectra of orthotantalates of chromium and iron

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3382-3383

TOPIC TAGS: chromium compound, iron compound, tantalum compound, ir absorption, absorption spectrum, valence band, chemical bonding

ABSTRACT: The authors produced polycrystalline samples $CrTaO_4$ and $FeTaO_4$ by scintering the initial oxides into tablets at 1320C for twenty hours. The infrared spectra were plotted with a two-beam spectrograph (IKS-14) in the interval 400 — 2000 $cm^{-1}$, using ground samples annealed at 900C and mixed with dehydrated KBr(tantalate concentration 1.2%) and pressed at 6,000 $kg/cm^2$. To check the results in the NaCl region (700 — 2,000 $cm^{-1}$), the ir spectra were taken in addition in a suspension (matrix) of mineral oil. The ir spectra show that $CrTaO_4$ and $FeTaO_4$ have an intense absorption band near 600 $cm^{-1}$, the same region where a strong absorption band exists for titanium dioxide and also for calcium, strontium, barium, and lead titanate

Card 1/2

ACC NR: AP6036991

and sodium and potassium niobate. It is consequently possible to ascribe the absorption band to valence vibrations of the Ta-O, Cr-O, and Fe-O bonds, in analogy with the deductions for the other compounds. The authors thank N. S. Kholodov for the opportunity to use the spectrometer. Orig. art. has: 1 figure.

SUB CODE: 07, 20/ SUBM DATE: 16May66/ ORIG REF: 002/ OTH REF: 001

Card 2/2

KRYLOV, Ye.I., inzh.

Explosion in the crankcase of an engine. Energomashinostroenie 11 no.4:p.3 of cover Ap '65. (MIRA 18:6)

KRYLOV, Ye.I., inzh.

Detonation in engine crankcases. Energomashinostroenie 11 no.5:
49 My '65.
(MIRA 18:6)

KRYLOV, Ye.N.

Council of Coordination. Izv.ASiA no.4:155-156 '59. (MIRA 13:6)

1. Uchenyy sekretar' Soveta Akademii stroitel'stva i arkhitektury SSSR.

(Building research)

KRYLOV, Ye.N.

Council of Coordination. Izv. ASiA no.1:114-116 '60. (MIRA 13:9)

1. Uchenyy sekretar' soveta po koordinatsii Akademii stroitel'stva i arkhitektury SSSR.

(Building research)

**KRYLOV, Ye.N.**

Council of Coordination. Izv. ASiA no. 3:131-132 '60.
(MIRA 13:12)

1. Uchenyy sekretar' soveta Akademii stroitel'stva i arkhitektury SSSR.
(Building research)

KRYLOV, Ye.P.

Using traction radial-flow turbine in braking an automobile by the gas-turbine engine. Avt. prom. 29 no.7:9-13 Jl '63.
(MIRA 16:8)

1. Moskovskiy avtomekhanicheskiy institut.
(Automobiles—Engines(Compressed gas))

L 2574-66 EWT(m)/EWP(w)/EWP(v)/T-2/EWP(k)/ETC(m) WW/EM
ACCESSION NR: AP5019293 UR/0143/65/000/007/0066/0073 45
621.165.155 44

AUTHOR: Krylov, Ye. P. (Engineer); Spunde, Ya. A. (Candidate of technical sciences) B

TITLE: Effect of the gap between rotor blades 96 and housing of a radial turbine on its performance

SOURCE: IVUZ. Energetika, no. 7, 1965, 66-73

TOPIC TAGS: gas turbine, radial turbine

ABSTRACT: The results of a 1959 experimental study of dissipation in an air radial turbine are reported. The relative internal turbine efficiency was determined; Re number variation was $(1.1-1.7)\times 10^6$; turbine pressure drop, 1.25 and 1.67; gap variation, 0.15–7 mm. It is found that the gap (clearance) loss plays an important role in the axial part of the rotor, and only a very little role in the radial part. The gap swirl results in a gap-to-channel gas flow, and

Card 1/2

L 2574-66

ACCESSION NR: AP5019293

this phenomenon reduces the gas leakage around the rotor-blade tips. The above phenomenon is also enhanced by Coriolis forces. In subsequent testing of various radial turbines, it was noticed that the turbine efficiency depended only very slightly on the gap value. It is found that: (1) The gap loss is considerably lower in radial centripetal turbines than in axial turbines; hence, the gaps in radial turbines need not be very small; (2) An empirical formula has been developed for calculating the gap loss; (3) A gas-dynamic scheme is suggested to explain the low gap loss. Orig. art. has: 7 figures and 14 formulas.

ASSOCIATION: Moskovskiy avtomekhanicheskiy institut (Moscow Automechanical Institute)

SUBMITTED: 08May64 ENCL: 00 SUB CODE: PR

NO REF SOV: 009 OTHER: 001

Card 2/2

ACC NR: AR7004086 (N) SOURCE CODE: UR/0169/66/000/012/B056/B056

AUTHOR: Krylov, Ye. V.; Marchenko, A. S.

TITLE: Evaluation of accuracy of probability characteristics for connected meteorological time series

SOURCE: Ref. zh. Geofizika, Abs. 12B408

REF SOURCE: Sb. 3-ya Nauchno-tekhn konferentsiya Novosib. fil. N.-i. in-ta aeroklimatol. Tezisy dokl. Novosibirsk, 1966, 19

TOPIC TAGS: meteorology, mean square error, random process, probability, correlation function, practical meteorology

ABSTRACT: Formulas were obtained to calculate the mean square errors of probability characteristics, taking the correlative connection of the elements of the time series into consideration. The theoretical relationship between the time correlative functions of meteorological elements and the correlative functions of the respective indicator processes was tabulated. The latter are used to evaluate the accuracy of climatic probability characteristics. Examples of such calculations are given. The theoretical results are compared with factual data obtained

Card 1/2 UDC: 551.501.45:551.580(018)

ACC NR: AR7004086

by processing archival material covering a 25-yr period obtained from several stations in Western Siberia. A good correlation of theoretical and factual connections between correlative functions was found. Utilization of these connections eliminates the need for highly complicated statistical processing of indicated random processes. [Translation of abstract] [GC]

SUB CODE: 04, 12/

Card 2/2

IVANOV, V.A.; KRYLOV, Ye.V.

Changes in the temperature of liquid gases during evaporation.
Gaz. prom. 9 no.12:21-23 '64. (MIRA 18:3)

DOBROVOL'SKIY, M. [Dobrovol's'kyi, M.], kand.tekhn.nauk; KRYLOV, Yu.,
kand.tekhn.nauk

Tamed fire. Nauka i zhyttia 12 no.11:12-13 N '62. (MIRA 16:1)
(Rockets (Aeronautics))

AGASYAN, P.K.; KRYLOV, Yu.A.; [illegible], A.I.

"Potentiometry" by J. Bercik, J. Tölgyessy. Reviewed by P.K. Agasian, IU.A. Krylov, A.I. [illegible]. Zhur. anal. khim. 20 no.6: 762 '65. (MIRA 18:7)

DUNAYEV, V.V.; KRYLOV, Yu.F.

Distribution of spofadazin in the body of white rats. Farm.i toks. 28 no.3:321-323 My-Je '65. (MIRA 18:8)

1. Nauchnyye rukovoditeli - chlen-korrespondent AMN SSSR prof. V.A. Sanotskiy (Moskva) i dotsent A.A.Mikhlin (Ryazan').

[illegible], Yu.F.

Effect of vasoconstrictors and vasodilators on the vessels of the extremities and the liver of frogs under conditions of a reduced tone of their wall. Nauch. trudy Riaz. med. inst. 15:42-45 '62.

Comparative effect of saltwort alkaloids (salsoline and salsolidine). Ibid.:45-49 (MIRA 17:5)

1. Kafedra farmakologii (zav. kafedroy - dotsent [illegible] Nikulin) Ryazanskogo meditsinskogo instituta imeni Pavlova.

KRYLOV, Yu.F.

Effect of penicillin on the distribution of sulfanilamides in the body following their multiple administration. Antibiotiki 9 no.1:53-60 Ja '64. (MIRA 18:3)

1. Kafedra farmakologii (zav. A.A.Nikulin) Ryazanskogo meditsinskogo instituta imeni akademika Pavlova.

PETUKHOV, I.L.; KRYLOV, Yu.I.

Using the zinc method of gas purification from $SO_2$ in zinc plants. Sbor. nauch. trud. Gintsvetmeta no.20:135-143 '63.
(MIRA 17:12)

KRYLOV, Yu.K., inzh.

Longitudinal joining of beams of diaphragmless spans by dowels. Transp. stroi. 15 no.5:45-47 My '65. (MIRA 18:7)

ACC NR: AP6034937 (N) SOURCE CODE: UR/0146/66/009/005/0008/0013

AUTHOR: Krylov, Yu. K.

ORG: Leningrad Electrotechnical Institute im. V. I. Ul'yanov (Leningradskiy elektrotekhnicheskiy institut)

TITLE: Measurement of flux distribution in laser radiation

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 5, 1966, 8-13

TOPIC TAGS: laser, laser beam, laser emission, LASER RADIATION

ABSTRACT: A method of investigating radiation flux distribution in a laser beam has been proposed. The described experimental equipment recorded the laser emission by thermal destruction of thin metal film deposited on dielectric disks (radius, 20 cm) which were rotated at a speed of 15000 rpm. A neodymium glass plate ($\lambda$ = 1.063 μ) measuring 8 x 45 x 200 mm was used in the laser as the working body. The experiment indicated that in discrete time the laser working body emits radiation from different points, whose number varies with increase in the radiation pulse. The proposed equipment investigates radiation emitted by any point at laser-emitting surface. Orig. art. has: 4 figures.

SUB CODE: 20/ SUBM DATE: 20Mar66/ ORIG REF: 004/ OTH REF: 001/

Card 1/1 UDC: 621.37.39

KRILOV, YU. M.

PA 167T100

USSR/Oceanography - Wave Motion Jan/Feb 48

"Problem of Wave Propagation Along the Surface of a Heavy Fluid of Varying Depth," Yu. M. Krylov

"Meteorol i Gidrol" No 1, pp 75-81

Discusses problem of variation of wave elements of a heavy fluid in transition from one depth to another. Concludes: (1) wave length is considerably more dependent on depth than height for given period; (2) wave height can increase, stay the same, or decrease with a depth decrease, while the wave length always decreases; and (3) group velocity of waves, in contrast to speed of propagation, is

not a monotonic function of depth. Submitted 18 Nov 47

[redacted]

167T100

1. Krylov, Yu. M.

2. USSR (600)

"Propagation of Long Waves Over an Ice Field."
Trudy Goin, Issue 8, 1948 (107-110)

9. Meteorologiya i Gidrologiya, No. 3, 1949,
[redacted] Report U-2551, 30 Oct 52.

KRYLOV, Yu. M.

Wave Mechanics

Currents accompanying the propagation of long waves. Met.i gidrol. No. 5 1949

9. Monthly List of Russian Accessions, Library of Congress, October 1951, Uncl.
2

KRYLOV, Yu.M.

Theory of three-dimensional marine waves. Trudy GOIN no.21:129-138 '52. (MIRA 11:3)

(Waves)

KRYLOV, Iu.M.

Water pressure on structures with a vertical wall. Trudy GOIN no.21:
139-145 '52. (MIRA 11:3)

(Hydrodynamics)

KRYLOV, Yu.M.

Filtration by a porous bottom under the action of waves and its effect on wave elements. Trudy GOIN no.21:146-153 '52.
(Ocean bottom) (Filters and filtration) (Waves)

KRYLOV, Yu., (Capt 3d Rank, Senior Navigator of the Cruiser Admiral Nakhimov)

Author of article, "In the Struggle for Great Accuracy in the Ship's Navigation," concerning the navigational problems encountered by his department during the Admiral Nakhimov's recent cruise to Albania. (Krasnaya Zvezda, Moscow, 28 Jul 54)

SO: SUM No. 239, 13 Oct 1954

GUSEV, Aleksandr Mikhaylovich; ANAN'IN, V.I., redaktor; [redacted]
redaktor; SHAR-BARONOV, L.K., retsenzent; KRASHAYA, A.K., tekhnicheskiy redaktor

[Effect of the wind on a ship's course and navigability] Vliianie
vetra na put' i upravliaemost' sudna. Moskva, Izd-vo "Morskoi
transport," 1954. 232 p. (MLRA 8:4)
(Navigation) (Winds)

transmitted to the waves by the normal pressure and tangential stress of the wind per unit of time, respectively; $E_\mu$ is the dissipation of energy by turbulent viscosity. The second equation [illegible]

KRYLOV, Yu.M.

New foreign studies on wind waves. Meteor.i gidrol. no.9:49-54 S '56.
(MLRA 9:11)

(Waves) (Ocean)

KRYLOV, YU. M.

"Concerning the Statistical Principle of the Distribution of the Height of Three-Dimensional Wind Waves," by Yu. M. Krylov, Meteorologiya i Gidrologiya, No 11, Nov 56, pp 41-44

"The clarification of the laws governing the distribution of the elements of three-dimensional wind waves is important both for the successful development of the theory and the methods of calculating wind waves and for the solution of a series of applied problems."

The author presents his own study of the height of three-dimensional waves as opposed to other conflicting studies.

A theoretical dimensionless function of determining the height of three-dimensional wind waves is presented. This method was recently tested in the State Oceanographic Institute by K. M. Sirotov by using two series of stereophoto survey mosaics. This survey of waves was produced by Sirotov in 1954 in the wavemeter station Neftyanye Kamni. Each series consisted in repeatedly photographing a section of the sea at one-minute time intervals. On the basis of calculations made on the photographed waves it was possible to construct an average curve of the distribution of the heights. Included is a table comparing the theoretically determined heights of the wind waves with stereophoto survey data.

SUM. 1305

KRYLOV, Yu. M.

124-11-12728

Translation from: Referativnyy Zhurnal, Mekhanika, 1957, Nr 11, p. 57 (USSR)

AUTHOR: Krylov, Yu. M.

TITLE: Statistical Theory and Calculation of Oceanic Wind Waves. (Statisticheskaya teoriya i raschet morskikh vetrovykh voln) Part I

PERIODICAL: Tr. Gos. okeanogr. in-ta, 1956, Nr 33, pp 5-79

ABSTRACT: Chapter I contains a critical literature survey of existing empirical and theoretical works on wind-driven waves. Especial attention is focused on theoretical investigations. The Author notes their shortcomings: 1) In the derivation of the energy equations no consideration is given to the simultaneous co-existence of an entire spectrum of waves; 2) The three-dimensional character of the waviness is not considered; 3) The relationship between steepness and age of a wave is not derived from an analysis of the processes occurring along the air-water boundary with due consideration of a variety of wave elements; 4) The energy transfer mechanism from wind to wave has not been fully explained; 5) The turbulent character of the wind flow and the variation of the wind with altitude has not been considered.

Chapters II and III outline a new statistical theory which is to a

Card 1/3

124-11-12728

Statistical Theory and Calculation of Oceanic Wind Waves. (continued.)

significant degree free of the aforeindicated drawbacks. Wind waves are therein considered as turbulent, pulsating movements of the ocean surface layer caused by the wind. Single-valued, as well as multi-valued, functions are drawn up for all fundamental wave elements. Concepts relating to the elements of the wave motion at a point and, also, the elements of three-dimensional waves are established, and a statistical relationship is established between them. Measured data are adduced in support of the theoretical deductions. A consistent system of equations is set up for the determination of the average wave elements as functions of the length of the fetch, the wind velocity, and the time duration of its action. These equations are obtained through an application of the basic laws of Mechanics as well as an application of the aboveindicated wave-element functions; they reduce themselves to an energy equation, a relationship between the steepness and the age of the wave, and a relationship between the steepness of the wave along the wave crest and the age of the wave. Here the actual three-dimensional waves on a free surface are schematized into three-dimensional sinusoidal waves. The relationship between steepness and age of a wave are derived directly from the equation of the Hydro-

Card 2/3

124-11-12728

Statistical Theory and Calculation of Oceanic Wind Waves, (continued.)

mechanics of turbulent motions, projected on the vertical axis.

Bibliography: 58 references. (Ya. I.Sekerzh-Zen'kovich)

Card 3/3

[illegible]V, YU., RAZUMEYER, V.

"Engineering in the Sixth Five-Year Plan," (Series) Vtoraya Luna (Second Moon), Molodaya Gvardiya Publishing House of the Central Committee of the Young Communist Youth League, 1957.

Krylov, Yu. M.

**AUTHOR:** Krylov, Yu. M.

**TITLE:** Relation between Curvature and Rise of Wind Waves (O Svyazi mezhdu krutiznoy vozrastom vetrovykh voln)

**PERIODICAL:** Meteorologiya i Gidrologiya, 1957, Nr 1, pp 26-33 (U.S.S.R.)

**ABSTRACT:** Measurements carried out in the winter of 1955 in the Caspian Sea near Neftyanykh Kamney by means of wave recorders and electrocontact anemometers showed that wind waves in the process of their rise and fall in a storm region represent turbulent pulsations of the surface layer of the sea. The relation between mean wave curvature and mean rise of the wave was established for the process of wave rise and fall in a storm zone. This relation was obtained by a theoretical method and verified on the basis of instrumental measurements of waves and wind in the sea. The applicability of these relations for the case of wave damping is limited by wind velocities exceeding 5 - 7 m/sec. Graph 2 allows the finding of the height of the waves in the storm zone by the known mean period of the wave and mean wind velocity along the level of about 10 m. The graphs also show that there is no close relation between the mean heights and mean periods measured at various wind velocities. The wave curvature is the ratio of the wave height to its length and the wave rise is the ratio of the phase

Card 1/2

Relation between Curvature and Rise of Wind Waves

velocity of the wave to wind velocity. Equations determining the theoretical relation between curvature and rise of wave are given. Fig. 1 shows the results of testing the theoretical relation between curvature and rise obtained by Ya. G. Vilenskiy and associates. In the case of a fixed period, the height of the waves will depend upon the wind velocity and the wave curvature at a fixed period will also increase with the increase in wind velocity. This latter finding is in agreement with the A. A. Ivanov (3) findings. The functional relation between mean heights and mean periods of waves in the storm zone was established theoretically and by actual test data. The wind velocity is included in the form of a parameter.

2 Graphs. There are 3 Slavic references.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 2/2

[redacted]

Methods of calculating the elements of wind waves, verifying these methods, and applying them to the calculation of maximum dimensions of storm waves in the maritime region of Aspheron. Trudy GOIN no.36:63-86 '57. (MIRA 10:7)

(Aspheron Peninsula region--Waves)

KRYLOV, Yu M

SORKINA, A.I.; KRYLOV, Yu.M.,red.; TARKHUNOVA, V.I.,red.; ZARKH, I.M., tekhn.red.

[Plotting wind-field maps for seas and oceans] Postroenie kart vetrovykh polei dlia morei i okeanov. Moskva, Gidrometeor. izd-vo, 1958. 73p. (Moscow. Gosudarstvennyi okeanograficheskii institut. Trudy, no.44) (MIRA 11:12)
(Meteorology, Maritime--Charts, diagrams, etc.) (Winds)

124-58-9-9889D

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 59 (USSR)

AUTHOR: Krylov, Yu. M.

TITLE: The Statistical Theory and Calculation of Oceanic Wind Waves (Statisticheskaya teoriya i raschet morskikh vetrovykh voln)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Doctor of Physical-Mathematical Sciences, presented to the Gos. okeanogr. in-t (State Institute of Oceanography), Moscow, 1958

ASSOCIATION: Gos. okeanogr. in-t (State Institute of Oceanography), Moscow

1. Ocean waves--Theory

Card 1/1

KRYLOV, Yu.M.

3(9) PHASE I BOOK EXPLOITATION SOV/2546

Moscow. Gosudarstvennyy okeanograficheskiy institut

Trudy, vyp. 42 (Transactions of the State Institute of Oceanography, Nr 42) Moscow, Gidrometeoizdat, 1958. Errata slip inserted. 850 copies printed.

Scientific Eds.: V.A. Tsikunova and P.S. Lineykin; Eds.: A.D. Perlovskaya and V.I. Tarkhunova; Tech. Ed.: I.M. Zarkh.

PURPOSE: This collection of articles is intended for scientific workers, graduate students, and engineers working in the field of marine physics.

COVERAGE: This issue of the Institute's Transactions contains articles on the further development of the statistical theory of wind wave disturbance, the problem of wind currents in a stratified sea, and a simplified method of computing vertical temperature distribution in the sea during a period of cooling. No personalities are mentioned. References accompany each article.

Card 1/2

Transactions (Cont.) SOV/2546

TABLE OF CONTENTS:

Krylov, Yu.M. Statistical Theory and Computation of Wind Waves. Part II 3

Kineykin, P.S. The Effect of an Interface on Wind Currents in a Deep Sea 89

Brovikov, I.S. Deriving a Generalized Function of the Wave Height Distribution on the Surface of a Heavy Liquid 105

Tsikunov, V.A. Simplified Theory of Convection Overturn in the Upper Layers of the Sea 115

Borishanskiy, L.S. Distribution of Salinity in an Estuarine Area of the Sea 128

AVAILABLE: Library of Congress

Card 2/2

MM/jb
11-30-59

Krylov, Yu. M.

AUTHORS: Brovikov, I. S., Krylov, Yu. M. 50-2-10/22

TITLE: Critical Analysis and Evaluation of L. F. Titov's Formulas for the Computation of Sea Wind Elements in Deep Sea (Kriticheskiy analiz i otsenka formul L. F. Titova dlya rascheta elementov morskikh vetrovykh voln globukogo morya).

PERIODICAL: Meteorologiya i Gidrologiya, 1958, Nr 2, pp. 37-41 (USSR)

ABSTRACT: The semi-empirical formulae by L. F. Titov for the computation of the elements of sea-wind wave motions make possible the determination of the height of the wave from the slope of the wave, the velocity of wind and its duration of effect. Such formulae were suggested already before Titov by Bergen and Andreyanov.

Titov used the visual estimation of the slope of waves and of wind according to the catalogues of hydrometeorological observations made on ships in the Sea of Okhots during the navigation periods from 1928 to 1935. Besides, he utilized 45 plates of stereo-photographs of waves by means of which he changed from the estimation of the waves to the wave elements. As its is known already, the visual estimations of

Card 1/3

wind and especially of the slope of waves are most inaccourate and relative. Therefore, the relations obtained from these data, even in the case of a great number of observations, are unreliable and uncertain. Thus, the initial data cannot be acknowledged as useful for the computation formulae. The three different groups of observation data given here which were found by completely independent methods and in different geographical areas do not agree with the computations made by Titov. However, it can easily be found that these data agree well among each other. The used material exhaustively contains the elaborated data at present available of measurings by means of instruments of the sea-wind waves.

Finally it can be concluded that the formulae by Titov obtained according to observational data are of low quality and incomplete. They show errors in many cases and do not agree with the modern data of instrumental observations and with the empiric formulae. Therefore, the formulae by Titov

Card 2/3

Critical Analysis and Evaluation of L. F. Titov's Formulas for the Computation of the Sea Wind Elements in Deep Sea 50-2-10/22

must be regarded as outdated and presently not suited for practical application.
There are 2 figures, 2 tables, and 7 references, 4 of which are Slavic.

AVAILABLE: Library of Congress

Card 3/3

VILENSKIY, Ya.G.; GLUKHOVSKIY, B.Kh.; KRYLOV, Yu.M.; YUSHCHAK, A.A.

Some results and methods of studying wind waves in the sea.
Nek. probl. i res. okean. issl. no.1:29-33 '59. (MIRA 13:2)
(Waves)

KRYLOV, Yu.M.

State of and outlook for the study of sea waves. Trudy Okean.kom. 11:3-6 '61. (MIRA 14:7)

(Waves)

KRYLOV, Yu.M.

Calculation of swell waves. Trudy GOIN no.61:22-35 '61. (MIRA 14:10)

(Waves)

KRYLOV, Yu.M.

Computing the maximum height of sea waves. Trudy GOIN no.61:36-52 '61. (MIRA 14:10)

(Waves)

ABUZYAROV, Yu.N.[translator]; MATUSHEVSKIY, G.V.[translator];
STREKALOV, S.S.[translator]; KRYLOV, Yu.M., red.;
VERES, L.F., red.; DOTSENKO, V.A., tekhn. red.

[Wind waves]Vetrovye volny. Moskva, Izd-vo inostr. lit-ry,
1962. 441 p. Translated from the English. (MIRA 15:11)
(Waves)

KRYLOV, Yu.M.

Energy spectrum of wind-generated waves in the deep sea. Trudy GOIN 67:15-32 '62. (MIRA 15:7)

(Waves)

KRYLOV, Yu.M.

Trends and problems in studying sea waves. Okeanologiia 3 no.4: 606-618 '63. (MIRA 16:11)

1. Gosudarstvennyy institut po proyektirovaniyu morskikh portov i sudoremontnykh predpriyatiy.

KRYLOV, Yu.M.; STREKALOV, S.S.; TSYPLUKHIN, V.F.

Study of the frequency power spectrum and heights of wind waves in the coastal zone. Izv. AN SSSR. Fiz. atm. i okeana 1 no.10:1065-1078 O '65. (MIRA 18:10)

L 04741-67 EWT(1) GW

ACC NR: AP6024429 (N) SOURCE CODE: UR/0362/66/002/007/0729/0739

AUTHOR: Krylov, Yu. M.; Strekalov, S. S.; Tsyplukhin, V. F.

40

B

ORG: none

TITLE: Investigation of the angular energy spectrum of wind waves

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 7, 1966, 729-739

TOPIC TAGS: wave propagation, fluid flow, hydrodynamics, ocean current

ABSTRACT: The authors examine the angular spectrum of wind waves of the deep sea and its changes in the coastal zone. The spectral method permits eliciting the physical essence of the principal qualitative and quantitative changes which a wave field undergoes in a narrow coastal shallow-water zone up to the surf belt and close to the shore in deep water. The essence of this method is that the complex wave motion which is observed under natural conditions is replaced by an aggregate of elementary two-dimensional waves with different amplitudes, lengths, directions, and random phases where each elementary wave obeys laws of classical hydrodynamics. A linear spectral model is used in which the complex motion is formed by simple summation of elementary harmonics. The distribution of energy between the elementary waves (spectral components) is characterized by the energy spectrum. Information on the distribution of wave energy as a function of direction of propagation ($\theta$) gives the angular spectrum $e_2(\theta)$,

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ACC NR: AP6024429

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which plays a decisive role in the formation of wave height under complex conditions of the coastal zone. The experimental data on the structure of the angular spectrum of wind-generated waves of the deep sea confirm the previously deduced hypothetical dependence $\cos^2 0$. Transformation of the angular spectrum in a narrow coastal zone up to the moment of breaking obeys the same regularities which were previously detected for the frequency spectrum, viz., each component of the angular spectrum changes according to the laws of the linear hydrodynamic theory without noticeable energy losses. This conclusion follows from a comparison of measurements under natural conditions with the results of theoretical calculations. Orig. art. has: 12 formulas, 2 tables, and 5 figures.

SUB CODE: 08,20/ SUBM DATE: 07Feb65/ ORIG REF: 008/ OTH REF: 006

Card 2/2

ACC NR: AT6028803 (N) SOURCE CODE: UR/3222/65/000/008/0005/0032

AUTHOR: Krylov, Yu. M. (Doctor of physico-mathematical sciences)

ORG: none

TITLE: Method of calculating heights of waves in deep sea by taking into consideration the coastline

SOURCE: Moscow. Gosudarstvennyy proyektno-konstruktorskiy i nauchno-issledovatel'skiy institut morskogo transporta. Trudy, no. 8(14), 1965. Volnovyye issledovaniya; inzhenernyye izyskaniya (Wave studies; engineering research), 5-32

TOPIC TAGS: ocean tide [illegible] ocean dynamics, spectrum analysis

ABSTRACT: A method of calculating wave heights in deep sea with any shape of coastline is described. The method is based on spectral theory of sea waves, especially that part of the theory where vertical wave oscillations and their energy spectrum of a turbulent sea are studied. The considered elements of a turbulent sea are quantitatively calculated by use of probability theory and mathematical statistics. Heights of wind generated sea waves are found for a complex coastline by assuming that the wind, at every point, has a constant velocity and direction. As a simplified example of above, heights of wind generated waves are calculated for the case of a rectilinear, infinitely long coastline where the wind direction is, at any angle toward the coast. Calculated results are compared with experimental data obtained by other

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ACC NR: AT6028803

researchers on the Kakhov reservoir. The calculated results are in agreement with the measured within 13%; this is the closest agreement heretofore obtained. Orig. art. has: 67 formulas, 8 tables, and 9 figures.

SUB CODE: 08/ SUBM DATE: none/ ORIG REF: 010/ OTH REF: 001

Card 2/2

ACC NR: AT6028804 (N) SOURCE CODE: UR/3222/65/000/008/0032/0058

AUTHOR: Krylov, Yu. M. (Doctor of physico-mathematical sciences); Strekalov, S. S. (Candidate of physico-mathematical sciences); Tsyplukhin, V. F. (Junior research associate)

ORG: none

TITLE: Energy spectrum transformation of wind generated sea waves in coastal zones

SOURCE: Moscow. Gosudarstvennyy proyektno-konstruktorskiy i nauchno-issledovatel'skiy institut morskogo transporta. Trudy, no. 8(14), 1965. Volnovyye issledovaniya; inzhenernyye izyskaniya (Wave Studies; engineering research), 32-58

TOPIC TAGS: ocean ~~wave,~~ tide spectrum analysis, ocean dynamics

ABSTRACT: An equation for sea waves is found for any shape of the bottom in coastal areas. The simple case of monochromatic waves propagating toward the coast is solved first. The complex nature of a turbulent sea surface is considered next as the first step toward a more realistic solution. The surface is represented (at large distances from the coast) as the sum of a large number of plane waves having different amplitudes, frequencies, directions of propagation, and having random phases uniformly distributed in the interval from 0 to 2π. The calculated results were compared with experimental data obtained from measurements made in coastal areas of the Black Sea during 1960-1962. Reduction of wave amplitudes in coastal areas having rectilinear coast lines begins in deep-water areas at considerable distance from the coast.

ACC NR: AT6028804

Average height of waves in the narrow coastal zone with inclinations of 0.1 to 0.01 at the beginning decreases and then begins to grow intensely up to the moment when the waves break down. Measured frequency spectra are compared with the calculated; transformation of frequency spectrum in the narrow coastal zone with isobaths occurs in accordance with linear theory up to the instant of wave break down. Orig. art. has: 3 formulas, 7 tables, and 11 figures.

SUB CODE: 08/ SUBM DATE: none/ ORIG REF: 027/ OTH REF: 006

Card 2/2

[illegible]

[illegible] ...ion of [illegible]

(MIRA 18:8)

KRYLOV, Yu.N., kapitan 2-go ranga

Evaluation of the accuracy of dead-reckoning sailing. Mor. sbor. 47 no.1: 58-64 Ja '64. (MIRA 18:7)

KRYLOV, Yu.N., kapitan 2-go ranga

Passing of ships in fog. Mor. sbor. 46 no.1:48-54 Ja '63.
(MIRA 16:1)
(Collisions at sea--Prevention)

KRYLOV, Yu.N., kapitan 2-go ranga

Determining gyrocompass corrections, at the base, in conditions of low visibility. Mor.sbor. 48 no.1:59-60 Ja '65.

(MIRA 18:4)

ACCESSION NR: AT4036166 S/0000/63/000/000/0211/0223

AUTHOR: Korpusov, G. V.; Kry*lov, Yu. S.; Zhirov, Ye. P.

TITLE: Laboratory multistep extraction assemblies for the separation of the rare-earth elements

SOURCE: AN SSSR. Institut geokhimii i analiticheskoy khimii. Redkozemel'ny*ye elementy* (Rare-earth elements). Moscow, Izd-vo AN SSSR, 1963, 211-223

TOPIC TAGS: rare earth, rare earth element, rare earth separation, geochemistry, analytical chemistry, extraction apparatus, countercurrent extraction, niobium, tantalum

ABSTRACT: In a preliminary review, the author describes and discusses five countercurrent or semi-countercurrent extraction assemblies designed by the authors and used for the separation of the rare-earth elements, niobium and tantalum. The assemblies are of the following types: (1) a glass extractor with air mixing for low-vapor-pressure organic solvents, whose construction and operation can be seen in the Enclosure; (2) a compact laboratory extraction unit composed of separate 10-cell standard polyethylene assemblies, with screw-mixers; (3) an enclosed extractor based on a mix-deposit principle and intended for a larger-scale process, the cells of which are partitioned into two compartments,

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ACCESSION NR: AT4035165

mixing, and depositing; (4) a semi-countercurrent laboratory extraction unit with air mixing, designed for a static heavy phase, with the other phase passing in succession through all the cells; and (5) a semi-countercurrent extractor unit for a static heavy phase with mechanical mixing, in which the light phase intermittently forms an emulsion with the heavy phase and, after layer separation in the next cell, moves on, while the heavy phase is recycled. Orig. art. has: 18 figures.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii AN SSSR (Institute of Geochemistry and Analytical Chemistry, AN SSSR)

SUBMITTED: 31Oct63 DATE ACQ: 30Apr64 ENCL: 01

SUB CODE: IC NO REF SOV: 003 OTHER: 006

Card 2/3

ACCESSION NR: AT4035165

ENCLOSURE: 01

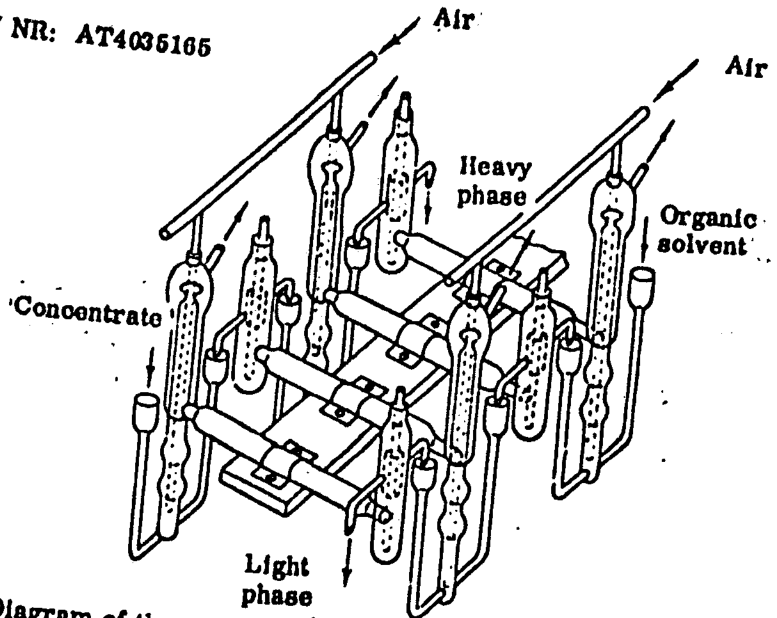

Fig. 1. Diagram of the way in which the countercurrent cells can be combined.

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BREZHNEVA, N. Ye.; KORPUSOV, G. V.; PATRUSHEVA, Ye. N.; PROKHOROVA, N. F.; KRYLOV, Yu. S.

"Extraction of radioactive fission elements."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

KRYLOV, Yu.S., inzh.

Effect of road conditions on the length of braking distance.
Trudy MADI no.22:186-196 '58. (MIRA 12:4)
(Automobiles--Dynamics)

KRYLOV, Yu. S. Cand Tech Sci -- (diss) "Study of the ~~traffic~~ capacity of [illegible] ~~automobile~~ highways." Mos, 1959. 23 pp with graphs (Min of Higher and Secondary Specialized Education RSFSR. Mos Motor Vehicle and Road Inst), 150 copies (KL, 48-59, 115)

KRYLOV, Yu.S.

Highway traffic patterns and traffic capacity. Avt.dor. 22 no.6: 16-18 Je '59. (MIRA 12:9)
(Traffic engineering)

KRYLOV, Yu.S.; FILINA, G.P.

Discussion concerning proposed standard technical specifications and roads. Avt.dor. 24 no.5:32 My '61. (MIRA 14:6)
(Road construction--Standards)

KOZLOV, Yu.S., kand.tekhn.nauk

Highway crossings. Avt.dor. 24 no.9:25-27 S '61. (MIRA 14:10)

(Road construction)

KOGAN, Eduard Israilevich; OSTASHINSKIY, Mikhail Davidovich;
KRYLOV, Yu.S., red.

[Safety measures in automotive transportation units]
Tekhnika bezopasnosti v avtokhoziaistvakh. Moskva,
Transport, 1965. 91 p. (MIRA 18:3)

1. [illegible], YU.

2. USSR (600)

4. Electric Heating

7. Eliminating freezing of the ground with electric heat. Khol. tekh. 30 No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

[illegible]

KRYLOV, Yu., inzhener.

Typical plans of cold storage warehouses. Khol.tekh. 31 no.2: 28-33 Ap-Je '54. (MLRA 7:7)
(Cold storage)

KRYLOV, Yu., inzh.

Construction of cold storage warehouses in the Chinese People's Republic. Khol. tekh. 35 no. 3:61-65 My-Je '58. (MIRA 11:7)
(China--Cold storage warehouses)

KRYLOV, Yu.S., inzh.

Standard plans for commercial refrigeration plants. Prom.stroi. 37 no.10:19-22 0 '59. (MIRA 13:2)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy kholodil'noy, molochnoy, maslyanoy i syrodel'noy promyshlennosti.
(Refrigeration and refrigerating)

KRYLOV, Yu.S.

Automation of wholesale cold storage warehouses according to the plans of the State Institute for the Design and Planning of Refrigeration and Dairy Industry Establishments. Ser.III: Nov.mash., obor. i sred.avtomatiz. no.59:42-51 '63. (MIRA 16:12)

1. Gosudarstvennyy institut proyektirovaniya kholoda.

SOV/124-59-1-428

Translation from: Referativnyy zhurnal. Mekhanika, 1959, Nr 1, p 61 (USSR)

AUTHOR: Krylov, Yu.V.

TITLE: The Investigation of a Hydraulic Shock in a Ramified System of Tubing by the Operational Method

PERIODICAL: V sb.: Nekotoryye zadachi gidrogazodinamiki (MVTU, Vol 67). Moscow, Oborongiz, 1955, pp 5-34

ABSTRACT: In the treatise the operational calculus method is applied to the calculation of the hydraulic shock in ramified systems of tubing. The research is based on the equations for the hydraulic shock given by N.Ye. Zhukovskiy. The following problems are considered: a simple tubing with a terminal volume for the case of a given pressure impulse, a simple tubing with a receiver and a terminal volume for the case of a given velocity impulse and without outlet, and a ramified system with one junction point without receiver and terminal volume. Also the problems of the transition from a shocklike perturbation to a perturbation of arbitrary type and of the propagation of a triangular velocity impule in a simple tubing with local volumes at the ends are treated. Bibl. 5 titles.

G.I. Dvukhsherstov

Card 1/1

**Name** : KRYLOV, Yu. V.

**Remarks** : According to an article entitled "Artificial Satellite", Yu. Krylov is the coauthor, with V. Razumeyev, of a popular-scientific brochure entitled "Second Moon" ([Moskva], 1957), which sets forth "the scientific and technical basis for the construction of an artificial satellite."

**Source** : P: Nauka i Zhizn', No. 1, January 1958, p. 76

KRYLOV, Yu.V

PHASE I BOOK EXPLOITATION 302

Krylov, Yuriy Vyacheslavovich, Razumeyev, Vladimir Fedorovich.

Vtoraya luna (The Second Moon) Moscow, Molodaya gvardiya, 1957.
46 p. 50,000 copies printed.

Ed.: Metantseva, M.; Tech. Ed.: Shuvalov, I.

PURPOSE: This Booklet was written to arouse public interest and pride in the sputniks.

COVERAGE: The booklet discusses what sputnik projects exist at the present time, how the sputniks will be orbited, and what scientific information can be furnished by the instruments they carry. The 15 figures show: the structure of the atmosphere and temperature variations with altitude (fig.1); results of photographic surveys of the earth's surface obtained by high-altitude rocket (fig.2); a "V-2" rocket on its launching platform (fig.3); a "Bumper" rocket in flight, with the first-stage motor working (fig.4); the orbits of the Moon and of an artificial satellite (fig.5);

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The Second Moon (Cont.) 302

the power-plant layout of a long-range rocket (fig.6); a longitudinal section of a long-range rocket (fig.7); the flight trajectory of a long-range rocket (fig.8); the configuration of a 2-stage rocket (fig.9); the configuration of a 3-stage rocket for launching satellites (fig.10); the take-off of a satellite-carrying rocket (fig.11); transmitting devices used in investigation of the upper layers of the atmosphere (figs. 12 and 13); a rocket-control board (fig.14); a diagram showing a sputnik being used for television transmission (fig.15); and finally, the booklet gives a little data on projects connected with the International Geophysical Year.

TABLE OF CONTENTS:

From the Daring Assumptions of Dreamers to Modern Rockets 5

The Moon and Engine-powered "Moons" 15

A Sputnik is Orbited 19

Around the Earth Along a Spiral 29

AVAILABLE: Library of Congress MLM/lsb
Card 2/2

| | |
|---|---|
| Name : | KRYLOV, Yu. V. |
| Title : | Candidate of Technical Sciences |
| Remarks: | Yu. Krylov is the author of an article entitled "Heart of the Rocket" which briefly describes the design problems of rocket engines. |
| Source : | P: Ogonek, No. 43, 20 October 1957, pp. 2-3 |

VOLYNKIN, Yu.M.; YAZDOVSKIY, V.I.; GENIN, A.M.; VASIL'YEV, P.V.; GYURDZHIAN, A.A.; GUROVSKIY, N.N.; GORBOV, F.D.; SERYAPIN, A.D.; BELAY, V.Ye.; BAYEVSKIY, R.M.; ALTUKHOV, G.V.; KOPANEV, V.I.; KAS'YAN, I.I.; YEGOROV, A.D.; SIL'VESTROV, M.M.; SIMPURA, S.F.; TERENT'YEV, V.G.; KRYLOV, Yu.V.; FOMIN, A.G.; USHAKOV, A.S.; DEGTYAREV, V.A.; VOLOVICH, V.G.; STEPANTSOV, V.I.; MYASNIKOV, V.I.; YAZDOVSKIY, V.I.; KASHIN, P.S., tekhn. red.

[First space flights of man; the scientific results of the medicobiological research conducted during the orbital flights of the spaceships "Vostok" and "Vostok-2"]Pervye kosmicheskie polety cheloveka; nauchny rezul'taty mediko-biologicheskikh issledovanii, provedennykh vo vremia orbital'nykh poletov korablei-sputnikov "Vostok" i "Vostok-2." Moskva, Izd-vo Akad. nauk SSSR, 1962. 202 p. (MIRA 15:11)
(SPACE MEDICINE) (SPACE FLIGHT TRAINING)

ACCESSION NR: AT4042709 S/0000/63/000/000/0408/0411

AUTHOR: Popov, V. A.; Pikovskiy, A. M.; Kiselev, Yu. V.; Kry'lov, Yu. V.

TITLE: Dual perception indicators for man-operated systems

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 408-411

TOPIC TAGS: visual indicator, dual perception indicator, semiautomatic control, human operator, auditory indicator, perception threshold, frequency differentiation

ABSTRACT: One of the chief problems in integrating the human operator into the control of semiautomatic systems lies in the area of more efficient transmission of information to the human operator. Most modern systems have only visual indicators. At the same time, it seems desirable to reinforce the visual indicator with an auditory one. The design of such indicator systems requires the knowledge of thresholds of sound differentiation based on frequency. It was found that simultaneous use of visual and auditory indicators increases perception by 6--11%

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ACCESSION NR: AT4042709

in comparison with the use of only one indicator. With some subjects, perception was increased by as much as 35--55%. In designing auditory signals for systems with two indicators, it should be kept in mind that the threshold of sound differentiation based on frequency must differ by at least 0.02 cps from the frequency being tested. In semiautomatic control systems, the parameter which must be most closely controlled by the human operator should have both visual and auditory indicators.

ASSOCIATION: none

SUBMITTED: 27Sep63 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

Krylov, Yu.V. .7

ACCESSION NR: AT4042700 S/0000/63/000/000/0339/0343

AUTHOR: Lebedinskiy, A. V.; Arlashchenko, N. I.; Busy'gin, V. Ye.; Vartbaronov, R. A.; Veselov, A. S.; Volokhova, N. A.; Grigor'yev, Yu. G.; Yemel'yanov, M. D.; Kalyuzhnaya, T. V.; Kry'lov, Yu. V.; Polyakov, B. I.; Farber, Yu. V.

TITLE: Effects of Coriolis accelerations on the human organism

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy' konferentsii. Moscow, 1963, 339-343

TOPIC TAGS: vestibular analyzer, cosmonaut selection, cosmonaut training, semicircular canal, acceleration, rotation, nystagmus, optical analyzer, Coriolis acceleration

ABSTRACT: Studies of the effect of prolonged Coriolis accelerations on the human organism must be made as a preliminary step toward the creation of artificial gravity in spaceships. Studies were performed in a slowly rotating MBK-1 chamber (a cylindrically shaped room 2.1 m in diameter and 2.3 m high, equipped with two armchairs). In the first series of experiments, 13 healthy persons were subjected

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ACCESSION NR: AT4042700

to prolonged rotation of 1 to 5 hours at an angular velocity of 5.3°/sec. In the second series of experiments, 4 subjects were rotated for 24 hours at angular velocities of 5.3, 10.6, and 21.2°/sec. Coriolis accelerations were created periodically by tilting the body and head in a plane perpendicular to the plane of rotation of the chamber at the rate of 1 movement/sec. Prolonged stay of subjects with normal vestibular sensitivity under conditions of rotation at 5.3, 10.6, and 21.2°/sec resulted in functional changes in the condition of the central nervous system and the cardiovascular system, and in disruption of the body temperature control and the balancing function. The degree of vegetative disorders was found to be directly proportional to the speed of rotation and the degree of vestibular sensitivity of the subjects. During cumulative action of Coriolis accelerations, the majority of the subjects developed an adaptation which was noted from 1 to 5 hours after beginning of the rotation. On the basis of the results obtained, the method of prolonged slow rotation is recommended for training purposes.

ASSOCIATION: none

SUBMITTED: 27Sep63 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AT4042721 S/0000/63/000/000/0507/0510

AUTHOR: Yazdovskiy, V. I.; Bryanov, I. I.; Kakurin, L. I.; Kry*lov, Yu. V.; Cherepakhin, M. A.

TITLE: Sensory-motor coordination in weightlessness

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy* konferentsii. Moscow, 1963, 507-510

TOPIC TAGS: weightlessness, motor coordination, spaceflight, sensory motor coordination, coordination testing, Vostok 3, Vostok 4

ABSTRACT: The effects of prolonged weightlessness on sensory-motor coordination were tested during the flights of Vostok III and Vostok IV, by Nikolayev and Popovich. Prior to the space flight, tests for sensory-motor coordination were worked out in laboratory conditions in a simulated Vostok-type cabin. The first test consisted of stretching out hands towards one of the instrument panels in the front part of the cabin. The cosmonaut would then memorize the position of his hands, close his eyes for 20 seconds, open them, and then evaluate the position

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of his hands. The results of each test were recorded in a flight log. Deviations from the original position were measured in centimeters. The second test consisted of drawing, first with one hand and then with the other, a spiral of three loops, a continuous-line five-pointed star, two vertical lines and two horizontal lines. These tests were performed with eyes open and with the eyes closed. The hands, one of which held the log in which the drawings were made, were outstretched. The relatively simple first test was performed with approximately equal accuracy on the ground and in weightlessness. The results of the second test were somewhat more complex because the tests, even on the ground, were not performed equally well with the right as with the left hand, and not as well with the eyes closed as with the eyes open. However, a comparison of results obtained by the two cosmonauts during space flight with their performance in ground tests indicates that weightlessness does not reduce the quality of the sensory-motor coordination as far as this particular test is concerned. A comparison of the drawings indicates that in weightlessness the quality of the drawing was not only as good but actually better than that obtained on earth. This slight improvement can perhaps be explained by the comment of Popovich, who stated that the novelty of being in a weightless state induces a special alertness. Both cosmonauts stated that they felt they

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had no difficulty in working in a weightless state. Both felt that weightlessness presents no barrier in carrying out assigned flight tasks.

ASSOCIATION: none

SUBMITTED: 27Sep63 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 3/3

KRYLOV, Yu.V.

Characteristics of the auditory sensitivity under conditions of continuous and prolonged action of noise of medium intensity on man. Probl. kosm. biol. 4:102-106 '65. (MIRA 18:9)